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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/749,388	12/28/2000	Yuki Hidaka	1422-0454P	5562
2292	7590	05/18/2004	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			SHOSHO, CALLIE E	
			ART UNIT	PAPER NUMBER
			1714	

DATE MAILED: 05/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/749,388	HIDAKA ET AL.	
	Examiner	Art Unit	
	Callie E. Shosho	1714	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,5-10,12,13 and 16-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,5-10,12,13,18,21 and 23 is/are allowed.
- 6) ☒ Claim(s) 19,20 and 22 is/are rejected.
- 7) ☒ Claim(s) 2,3,16 and 17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3/16/04 has been entered.

2. It is noted that the after-final amendment filed 2/17/04 has now been entered and thus, the following rejections are given.

Claim Objections

3. Claims 2-3 and 16-17 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

In light of the amendment to claim 1, claim 2 is now in improper dependent form for failing to further limit the subject matter of the claim on which it depends, namely, claim 1. Claim 2 states that the graft copolymer is a vinyl polymer obtained by copolymerizing (meth)acrylic macromer (a), polymerizable unsaturated monomer (b), and monomer (c) copolymerizable with macromer (a) and monomer (b). From the specification (page 13, lines 3-

6), it is known that the nonionic polymer side chain (R) is formed from monomer (c). In claim 1, the nonionic polymer side chain is limited to those formed from polymer (I), polymer (II), copolymer (III), or group (IV), while monomer (c) in claim 2 encompasses all monomers copolymerizable with (a) and (b). Thus, claim 2 fails to further limit the claim on which it depends because claim 2 is broader than claim 1 in that monomer (c) in claim 2 encompasses any type of monomer copolymerizable with macromer (a) and monomer (b) and thus can form any type of nonionic polymer side chain (R) obtained from these monomers (c) while claim 1 is limited to four specific types of nonionic polymer side chain.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 19-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 19, which depends on claim 1, recites that the graft copolymer is prepared by polymerizing a monomer having an amino group, diazoating the resulting polymer to introduce an azo initiator structure into the polymer, and polymerizing an acrylate monomer using the polymer as an initiator. However, the scope of the claim is confusing because it is not clear how the process of claim 19 would produce the graft copolymer of claim 1. While it is seen how such process would produce graft copolymer comprising acrylic polymer side chain (P), i.e. formed

form the acrylate monomer, it is not clear how such process would produce graft copolymer comprising both acrylic polymer side chain (P) and nonionic side chain (R). How is the nonionic polymer side chain produced from such process? Clarification is requested.

Similar questions arise with respect to claim 20 that also depends on claim 1. Claim 20 requires treating polymer comprising acid chloride with alcohol peroxide to convert acid chloride group to peroxide initiator group and polymerizing the resulting polymer with acrylate monomer. The scope of the claim is confusing because it is not clear how such process would produce graft copolymer with both acrylic side chain (P) and nonionic polymer side chain (R). Such process would appear to produce graft copolymer with acrylic polymer side chain only. Clarification is requested.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claim 22 is rejected under 35 U.S.C. 102(b) as being anticipated by Anton et al. (U.S. 6,005,023).

Anton et al. disclose water-based ink jet ink comprising colorant and graft copolymer having polymeric backbone and macromonomer side chain. The polymeric backbone is obtained from C₁-C₈ (meth)acrylate as well as up to 30% ethylenically unsaturated acid such as acrylic

acid, i.e. salt-forming monomer. The macromonomer side chain is obtained from 50-80% methyl methacrylate, which corresponds to presently claimed formula (1) and 20-50% methacrylic acid (col.1, lines 65-67, col.2, lines 30-38, col.3, lines 17-30 and 48-61, and col.4, lines 12-16, 24-25, and 46-49).

In light of the above, it is clear that Anton et al. anticipate the present claim.

Allowable Subject Matter

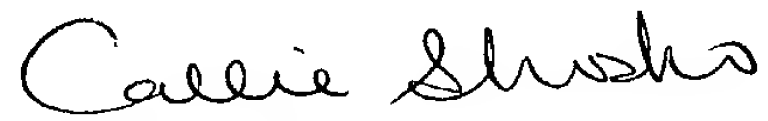
8. Claims 1, 5-10, 12-13, 18, 21, and 23 are allowable over the "closest" prior art Anton et al. (U.S. 6,005,023) and Grezzo Page et al. (U.S. 5,708,085) given that there is no disclosure or suggestion in either reference of water-insoluble graft copolymer comprising acrylic polymer side chain (P), salt-forming group (Q), and 10-35% nonionic side chain (R) as required in claims 1, 5-10, 12-13, 18, 21, and 23.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Callie E. Shosho whose telephone number is 571-272-1123. The examiner can normally be reached on Monday-Friday (6:30-4:00) Alternate Fridays Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 1714

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Callie E. Shosho
Primary Examiner
Art Unit 1714

CS
5/14/04